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United States Environmental Protection Agency
https://www.epa.gov/tribal-air/tribal-minor-new-source-review
January 4, 2017

Part 2: Submit Within 60 Days After Startup of Production -- Emission and Production Information

FEDERAL IMPLEMENTATION PLAN FOR TRUE MINOR SOURCES IN INDIAN COUNTRY IN THE OIL AND NATURAL GAS PRODUCTION AND NATURAL GAS PROCESSING SEGMENTS OF THE OIL AND NATURAL GAS SECTOR

Registration for New True Minor Oil and Natural Gas Sources and Minor Modifications at Existing True Minor Oil and Natural Gas Sources

Please submit information to:

[Reviewing Authority Address Phone]	

A. GENERAL SOURCE INFORMATION (See Instructions Below)

1. Company Name Enerplus Resources (USA) Corporation		**2. Source Name** Horns	
3. Type of Oil and Natural Gas Operation Oil Production		**4. New Minor Source?** ☒ Yes ☐ No **5. True Source Modification?** ☐ Yes ☒ No	
6. NAICS Code 211111		**7. SIC Code** 1311	
8. U.S. Well ID(s) or API Number(s) [if applicable] Trumpet 148-94-13B-3H, 3302501524			
9. Area of Indian Country Fort Berthold Indian Reservation	**10. County** Dunn	**11a. Latitude** 47.640670	**11b. Longitude** -102.607935

B. CONTACT INFORMATION (See Instructions Below)

1. Owner Name Enerplus Resources (USA) Corporation	Title
Mailing Address 950 17th Street, Suite 2200 Denver, Colorado 80202-2805	
Email Address kvanhees@enerplus.com	
Telephone Number 720-279-5515	Facsimile Number 720-279-5550
2. Operator Name (if different from owner) same as above	Title
Mailing Address	
Email Address	
Telephone Number	Facsimile Number
3. Source Contact Kristin Van Hees	Title Environmental Coordinator
Mailing Address	
Email Address kvanhees@enerplus.com	
Telephone Number 720-279-5515	Facsimile Number 720-279-5550

4. Compliance Contact same as above	Title
Mailing Address	
Email Address	
Telephone Number	Facsimile Number

C. EMISSIONS AND OTHER SOURCE INFORMATION

Include all of the following information in the table below and as attachments to this form:

Note: The emission estimates can be based upon actual test data or, in the absence of such data, upon procedures acceptable to the Reviewing Authority. The following procedures are generally acceptable for estimating emissions from air pollution sources: (1) unit-specific emission tests; (2) mass balance calculations; (3) published, verifiable emission factors that are applicable to the unit (i.e., manufacturer specifications); (4) other engineering calculations; or (5) other procedures to estimate emissions specifically approved by the Reviewing Authority. Guidance for estimating emissions can be found at https://www.epa.gov/chief

- ■ Narrative description of the operations.
- ■ Identification and description of any air pollution control equipment and compliance monitoring devices or activities.
- ■ Type and actual amount (annually) of each fuel that will be used.
- ■ Type of raw materials used (e.g., water for hydraulic fracturing).
- ■ Actual, annual production rates.
- ■ Actual operating schedules.
- ■ Any existing limitations on source operations affecting emissions or any work practice standards, where applicable, for all regulated New Source Review (NSR) pollutants at your source. Indicate all requirements referenced in the Federal Implementation Plan (FIP) for True Minor Sources in Indian Country in the Oil and Natural Gas Production and Natural Gas Processing Segments of the Oil and Natural Gas Sector that apply to emissions units and air pollution generating activities at the source or proposed. Include statements indicating each emissions unit that is an emissions unit potentially subject to the requirements referenced in the FIP, but does not meet the definition of an affected facility under the referenced requirement, and therefore, is not subject to those requirements.
- ■ For each emissions unit comprising the new source or modification, estimates of the total allowable (potential to emit) annual emissions at startup of production from the air pollution source for the following air pollutants: particulate matter, PM_{10}, $PM_{2.5}$, sulfur oxides ( ), nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H_2SO_4), hydrogen sulfide (H_2S), total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates. Allowable annual emissions are defined as: emissions rate of an emissions unit calculated using the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical

or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation, or the effect it would have on emissions, is legally and practically enforceable. You must determine the potential for emissions within 30 days from the startup of production.

☒ For each emissions unit comprising the new source or modification, estimates of the total actual annual emissions during the upcoming, consecutive 12 months from the air pollution source for the following air pollutants: particulate matter (PM, PM_{10}, $PM_{2.5}$), sulfur oxides (SO_x), nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, ammonia (NH_3), fluorides (gaseous and particulate), sulfuric acid mist (H_2SO_4), hydrogen sulfide (H_2S), total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates. Estimates of actual emissions must take into account equipment, operating conditions, and air pollution control measures. You should calculate an estimate of the actual annual emissions using estimated operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted.

D. TABLE OF ESTIMATED EMISSIONS

Provide in the table below estimates of the total allowable annual emissions in tons per year (tpy) and total actual annual emissions (tpy) for the following pollutants for all emissions units comprising the new source or modification.

POLLUTANT	TOTAL ALLOWABLE ANNUAL EMISSIONS (TPY)	TOTAL ACTUAL ANNUAL EMISSIONS (TPY)
PM	NA	NA
PM_{10}	0.46	0.46
$PM_{2.5}$	NA	NA
SO_x	8.10	0.01
NO_x	55.69	11.40
CO	110.86	22.28
VOC	150.35	28.05
Pb	NA	NA

POLLUTANT	TOTAL ALLOWABLE ANNUAL EMISSIONS (TPY)	TOTAL ACTUAL ANNUAL EMISSIONS (TPY)
NH3	NA	NA
Fluorides	NA	NA
H_2SO_4	NA	NA
H_2S	7.62	0.00
TRS	NA	NA

Instructions for Part 2

Please answer all questions. If the item does not apply to the source and its operations write "n/a". If the answer is not known write "unknown".

A. General Source Information

1. Company Name: Provide the complete company name. For corporations, include divisions or subsidiary name, if any.
2. Source Name: Provide the source name. Please note that a source is a site, place, or location that may contain one or more air pollution emitting units.
3. Type of Operation: Indicate the generally accepted name for the oil and natural gas production or natural gas processing segment operation (e.g., oil and gas well site, tank battery, compressor station, natural gas processing plant).
4. New True Minor Source: [Per Federal Indian Country Minor New Source Review Rule, 40 CFR 49.153].
5. True Minor Source Modification: [Per Federal Indian Country Minor New Source Review Rule, 40 CFR 49.153].
6. North American Industry Classification System (NAICS): The NAICS Code for your oil and natural gas source can be found at the following link for North American Industry Classification System: http://www.census.gov/eos/www/naics/.
7. Standard Industrial Classification Code (SIC Code): Although the new NAICS code has replaced the SIC codes, much of the Clean Air Act permitting processes continue to use these codes. The SIC Code for your oil and natural gas source can be found at the following link for Standard Industrial Classification Codes: http://www.osha.gov/pls/imis/sic_manual.html.
8. U.S. Well ID or API Number: Unique well identifier as assigned by the Federal or State oil and gas regulatory agency with primacy, using the American Petroleum Institute (API) Standard for number format (pre-2014) or the Professional Petroleum Data Management (PPDM) Association US Well Number Standard (2014-present). Provide IDs for all oil and natural gas production wells associated with the facility, if applicable. May not be applicable for downstream production sources, such as compressor stations.
9. Area of Indian Country: Provide the name of the Indian reservation within which the source is operating.
10. County: Provide the County within which the source is operating.
11. Latitude & Longitude (11a. and 11b.): Provide latitude and longitude location(s) in decimal degrees, indicating the datum used in parentheses. These are GPS (global positioning system) coordinates. This information should be provided in decimal degrees with 6 digits to the right of the decimal point, indicating the datum used in parentheses (i.e., NAD 27, NAD 83, WGS 84 – WGS 84 is preferred over NAD 27).

B. Contact Information

Please provide the information requested in full.

1. Owners: List the full name (last, middle initial, first) of all owners of the source.
2. Operator: Provide the name of the operator of the source if it is different from the owner(s).
3. Source Contact: The source contact must be the local contact authorized to receive requests for data and information.
4. Compliance Contact: The compliance contact must be the local contact responsible for the source's compliance with this rule. If this is the same as the Source Contact please note this on the form.

C. Attachments

The information requested in the attachments will enable the U.S. Environmental Protection Agency (EPA) to understand the type of oil and natural gas source being registered and the nature and extent of the air pollutants to be emitted.

Disclaimers:

The public reporting and recordkeeping burden for this collection of information is estimated to average 6 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

Information in these forms submitted in compliance with the final Federal Indian Country Minor NSR rule may be claimed as confidential. A company may assert a claim of confidentiality for information submitted by clearly marking that information as confidential. Such information shall be treated in accordance with EPA's procedures for information claimed as confidential at 40 CFR part 2, subpart B, and will only be disclosed by the means set forth in the subpart. If no claim of confidentiality accompanies the report when it is received by EPA, it may be made public without further notice to the company (40 CFR 2.203).

C. Attachments

Narrative description of the operations

The Horns well site pad is an Oil Production Facility and currently consists of one producing oil wells; Trumpet 148-94-13B-3H. The well produces oil, water and natural gas which are piped from the well through a two phase separator and then a three phase heater treater separator. Separated produced water is sent to storage tanks and then disposed via truck. Separated oil liquids are piped through a line heater to a stabilization tower and then to storage tanks. The oil from the storage tanks is sold via pipeline. The associated gas from the separator is also sold via pipeline. The gas from the treater, stabilization tower and storage tanks is routed through a closed vent system to an engineered flare. The pad currently has a 362 hp generator for site power. Additional emission units include line heater combustion emissions, emissions from the engineered flare, and fugitive emissions.

Identification and description of all emission units and air pollution generating activities (with the exception of the exempt emissions units and activities listed in §49.153(c)

Emission Units	Emission Source Description
Production Tanks	(2) 1000 Bbl Oil Storage Tanks
	(1) 1000 Bbl Produced Water Storage Tanks
Associated Gas Flaring	Associated gas sent to flare during pipeline downtime
Line Heater	1,000,000 Btu/hr Line Heater
Generator	362 Hp Natural Gas Generator
Fugitives	Fugitive Equipment Leaks and Light Vehicle Traffic

Identification and description of any air pollution control equipment and compliance monitoring devices or activities

Air Pollution Control Equipment-
Steffes Engineered Dual-Tip Flares will be used to control emissions from the oil and water storage tanks, treater gas, stabilization tower gas and NGL skid residue gas. Steffes flares are capable of 98% DRE.

Compliance Monitoring Devices or Activities-
Flare temperature will be monitored in SCADA.
Low pressure vent line pressures will be monitored by field operators via gauge.
Semi-annual FLIR camera inspections will be conducted in compliance with OOOOa leak detection requirements. Monthly AVO inspections will also be conducted.

Type and actual amount (annually) of each fuel that will be used

An estimated 39,822 Mscf of natural gas will be used as fuel for the permanent onsite facilities

Type of raw materials used

Approximately 250,000 bbls of water was used for hydraulic fracturing

Actual, annual production rates

Actual annual production (potential production) is projected to be 219,555 bbls of oil per year. Presuming an average GOR of 1.1 Mscf/bbl, the facility will produce 241.5 MMscf/yr of associated gas.

Actual operating schedules

The Oil Production Facility will operate 8,760 hours per year.

First Date of Construction	2/3/2017
Date of Drilling Activities	5/6/2017
Date of Completion	10/1/2017
Date of First Production	10/4/2017

Any existing limitations on source operations affecting emissions or any work practice standards, where applicable, for all regulated NSR pollutants at your source.

This facility is applicable to the Federal Implementation Plan for Oil and Natural Gas Well Production Facilities; Fort Berthold Indian Reservation (FBIR FIP). The FBIR FIP requires controls for Oil Production Facilities and therefore, those controls are considered federally enforceable when calculating emissions from this facility. Monitoring, recordkeeping and reporting will follow the standards established in the FBIR FIP.

The following table describes each emissions unit subject to the requirements referenced in the Federal Implementation Plan for True Minor Sources in Indian Country in the Oil and Natural Gas Production and Natural Gas Processing Segments of the Oil and Natural Gas Sector (Indian Country FIP). Monitoring, recordkeeping and reporting will follow the standards established in the Indian Country FIP.

Requirements referenced in the Indian Country FIP

40 CFR part and Subpart	Title of Subpart	Potentially Affected Sources in the Production Segment	Applicable Emissions Unit
40 CFR part 63, subpart DDDDD	National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters	Process heaters	No applicable emissions unit onsite
40 CFR part 60, subpart Kb	Standards of Performance for Volatile Organic Liquid Storage Vessels for which Construction, Reconstruction, or Modification Commenced After July 23,1984	Fuel Storage Tanks (>75 cubic m)	No applicable emissions unit onsite
40 CFR part 60, subpart IIII	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	Compression Ignition Internal Combustion Engines	No applicable emissions unit onsite
40 CFR part 60, subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	Spark Ignition Internal Combustion Engines	- Natural gas engine(s) for generator(s)
40 CFR part 60, subpart OOOOa	Standards for New and Modified Sources in the Oil and Natural Gas Sector	Storage Vessels, Pneumatic Controllers, Compressors, Hydraulically Fractured Oil and Gas Well Completions, Pneumatic Pumps and Fugitive Emissions from Well Sites and Compressor Stations	- Oil storage vessels - Produced water storage vessels - Hydraulically fractured oil and gas well completions - Fugitive emissions
40 CFR part 63, subpart HH	National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities	Glycol Dehydrators	No applicable emissions unit onsite
40 CFR part 63, subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines	Reciprocating Internal Combustion Engines	No applicable emissions unit onsite
40 CFR part 60, subpart KKKK	Standards of Performance for New Stationary Combustion Turbines	Combustion Turbines	No applicable emissions unit onsite

Emissions Summary

Horns Well Pad		Actual Annual Emissions- PTE (TPY)							
Source ID	**Source Description**	**VOC**	**NO_x**	**CO**	**HAPs**	**SO_2**	**H_2S**	**PM_{10}**	**CO_2e**
Oil_Tanks	2-1000Bbl_Oil_Tanks	10.67	2.30	4.61	0.18	0.00	--	--	1953
Produced_Water_Tanks	1-1000Bbl_Produced_Water_Tanks	0.14	--	--	--	--	--	--	--
Associated_Gas_Flaring	Associated gas sent to flare	14.13	5.16	10.33	0.40	0.00	--	--	4379
Line_Heater	1,000,000 btu/hr line heater	0.04	0.44	0.35	0.01	--	--	0.03	513
Generator_Engine*	Natural Gas Generator	2.45	3.50	6.99	0.52	0.01	--	0.32	1902
Fugitives	Equipment Leaks/ Vehicle Traffic	0.62	--	--	0.04	--	0.00	0.11	6
Total PTE	**All Equipment**	**28.05**	**11.40**	**22.28**	**1.15**	**0.01**	**0.00**	**0.46**	**8752.68**

* Federally Enforceable Limits per NSPS JJJJ (40 CFR Part 60, Subpart JJJJ)

Tanks have Federally Enforceable controls at 98% per Federal Implementation Plan for Oil and Natural Gas Well Production Facilities, Fort Berthold Indian Reservation, North Dakota (FBIR Oil and Gas FIP)

Natural Gas Fuel Use (Mscf/yr)	39,822
Diesel Fuel Use (gal/yr)	0

Horns Well Pad		Allowable Annual Emissions (TPY)							
Source ID	**Source Description**	**VOC**	**NO_x**	**CO**	**HAPs**	**SO_2**	**H_2S**	**PM_{10}**	**CO_2e**
Oil_Tanks	2-1000Bbl_Oil_Tanks	13.34	2.88	5.76	0.22	0.26	--	--	2441
Produced_Water_Tanks	1-1000Bbl_Produced_Water_Tanks	0.18	--	--	--	--	--	--	--
Associated_Gas_Flaring	Associated gas sent to flare	133.72	48.88	97.76	3.74	7.83	--	--	41446
Line_Heater	1,000,000 btu/hr line heater	0.04	0.44	0.35	0.01	--	--	0.03	513
Generator_Engine*	Natural Gas Generator	2.45	3.50	6.99	0.52	0.01	--	0.32	1902
Fugitives	Equipment Leaks/ Vehicle Traffic	0.62	--	--	0.04	--	7.62	0.11	6
Total PTE	**All Equipment**	**150.35**	**55.69**	**110.86**	**4.54**	**8.10**	**7.62**	**0.46**	**46308.02**

* Federally Enforceable Limits per NSPS JJJJ (40 CFR Part 60, Subpart JJJJ)

Tanks have Federally Enforceable controls at 98% per Federal Implementation Plan for Oil and Natural Gas Well Production Facilities, Fort Berthold Indian Reservation, North Dakota (FBIR Oil and Gas FIP)

Natural Gas Fuel Use (Mscf/yr)	39,822
Diesel Fuel Use (gal/yr)	0

Oil Tanks

Horns Well Pad			
Source ID	Oil_Tanks	Tank Vapor GOR (scf/bbl)	56
Number of Oil Tanks	2	Tank Vapor MW (lb/lb-mol)	43.00
Size of Oil Tanks (bbl)	1000	Tank Vapor VOC Wt %	76.50%
Source Description	2-1000Bbl_Oil_Tanks	Tank Vapor HAP Wt %	1.27%
Tank Contents	Crude Oil	Tank Vapor H_2S Wt %	0.00%
Emission Controls	Utility Flare or Other 98% DRE Device	Heating Value (Btu/scf)	2715
Tank Orientation	Vertical, vents manifolded to flare	Gas Standard- V (scf/lb-mol)	379
		Emission Control- DRE	98%
Actual Annual Inputs- PTE		**Allowable Annual Inputs**	
Potential Hours of Operation	8760	Actual Hours of Operation	8760
Crude Oil Production (BOPD)	602	Crude Oil Production (BOPD)	752

Actual Annual Emissions- PTE

Pollutant	Emission Factor (lb/bbl)	Estimated Emissions (lb/hr)	Estimated Emissions (tpy)	Emission Factor Source
Estimated Flash/ Working/ Breathing Losses				
VOC	0.097	2.44	10.67	Tank GOR x MW x VOC Wt % / V x DRE
HAP	0.002	0.04	0.18	Tank GOR x MW x HAP Wt % / V x DRE
NO_x*	0.138	0.53	2.30	TCEQ
CO*	0.276	1.05	4.61	TCEQ
SO_2 (ppm H_2S)	0.000	0.00	0.00	Tank GOR x MW x H_2S Wt % / V x DRE
CO_2e**	53.075	445.88	1952.96	MRR

*= Lb/MMBtu, **= Kg/MMBtu

Allowable Annual Emissions

Pollutant	Emission Factor (lb/bbl)	Estimated Emissions (lb/hr)	Estimated Emissions (tpy)	Emission Factor Source
Estimated Flash/ Working/ Breathing Losses				
VOC	0.097	3.05	13.34	Tank GOR x MW x VOC Wt % / V x DRE
HAP	0.002	0.05	0.22	Tank GOR x MW x HAP Wt % / V x DRE
NO_x*	0.138	0.66	2.88	TCEQ
CO*	0.276	1.31	5.76	TCEQ
SO_2 (ppm H_2S)***	1.891E-03	0.06	0.26	Tank GOR x MW x H_2S Wt % / V x DRE
CO_2e**	53.075	557.35	2441.20	MRR

*= Lb/MMBtu, **= Kg/MMBtu, ***= Potential of 200 ppm H_2S

Produced Water Tanks

Horns Well Pad			
Source ID	Produced_Water_Tanks	Tank Contents	Produced Water
Number of Oil Tanks	1	Emission Controls	Utility Flare or Other 98% DRE Device
Size of Oil Tanks	1000	Emission Control- DRE	98%
Source Description	1-1000Bbl_Produced_Water_Tanks	Tank Orientation	Vertical, vents manifolded to flare
Actual Annual Inputs- PTE		**Allowable Annual Inputs**	
Potential Hours of Operation	8760	Actual Hours of Operation	8760
Produced Water Production (BblH_2OPD)	990	Produced Water Production (BH_2OPD)	1237

Actual Annual Emissions- PTE

Pollutant	Emission Factor (ton/bbl)	Estimated Emissions (lb/hr)	Estimated Emissions (tpy)	Emission Factor Source
VOC	1.95E-05	0.03	0.14	EPA-450/3-85-001a

Allowable Annual Emissions

Pollutant	Emission Factor (ton/bbl)	Estimated Emissions (lb/hr)	Estimated Emissions (tpy)	Emission Factor Source
VOC	1.95E-05	0.04	0.18	EPA-450/3-85-001a

enerplus **High Pressure Flare (Assoicated Gas)**

Horns Well Pad Inputs			
Source ID	Associated_Gas_Flaring	Assoc. Gas GOR (scf/bbl)	1100
Source Description	Associated gas sent to flare	Assoc. Gas MW (lb/lb-mol)	27.29
Equipment Usage	Associated gas flaring during pipeline downtime	Assoc. Gas VOC Wt %	40.03%
Emission Controls	Utility Flare or Other 98% DRE Device	Assoc. Gas HAP Wt %	1.12%
Tank Orientation	Vertical, vents manifolded to flare	Assoc. Gas H_2S Wt %	0.01%
		Heating Value (Btu/scf)	1527
		Gas Standard- V (scf/lb-mol)	379
		Emission Control- DRE	98%
Actual Annual Inputs- PTE		**Allowable Annual Inputs**	
Adjusted Associated Gas (Mscfd)	662	Estimated Volume of Gas Flared (Mscf/d)	1236
Total Pilot Light Fuel Use (Mscfd)	35	Total Pilot Light Fuel Use (Mscfd)	35
Estimated Flaring Time (hrs)	1314		

Actual Annual Emissions- PTE

Pollutant	Emission Factor (lb/scf)	Estimated Emissions Pilot Light (lb/hr)	Estimated Emissions Assoc. Gas (lb/hr)	Estimated Emissions (tpy)	Emission Factor Source
VOC	5.765E-04	0.84	15.89	14.13	MW x VOC Wt % / V x DRE
HAP	1.613E-05	0.02	0.44	0.40	MW x HAP Wt % / V x DRE
SO_2 (ppm H_2S)	7.201E-08	0.00	0.00	0.00	MW x H_2S Wt % / V x DRE
NO_x*	0.138	0.31	5.81	5.16	TCEQ
CO*	0.276	0.62	11.62	10.33	TCEQ
CO_2e**	53.075	260.86	4925.98	4378.95	MRR

*= Lb/MMBtu, **= Kg/MMBtu

Allowable Annual Emissions

Pollutant	Emission Factor (lb/scf)	Estimated Emissions Pilot Light (lb/hr)	Estimated Emissions Assoc. Gas (lb/hr)	Estimated Emissions (tpy)	Emission Factor Source
VOC	5.765E-04	0.84	29.69	133.72	MW x VOC Wt % / V x DRE
HAP	1.613E-05	0.02	0.83	3.74	MW x HAP Wt % / V x DRE
SO_2 (ppm H_2S)***	3.377E-05	0.05	1.74	7.83	MW x H_2S Wt % / V x DRE
NO_x*	0.138	0.31	10.85	48.88	TCEQ
CO*	0.276	0.62	21.70	97.76	TCEQ
CO_2e**	53.075	260.86	9201.71	41446.06	MRR

*= Lb/MMBtu, **= Kg/MMBtu , ***= Potential of 200 ppm H_2S

Line Heater Detail Sheet

Horns Well Pad			
Source ID	Line_Heater	Fuel Heating Value- HV (Btu/scf)	1527
Source Description	1,000,000 btu/hr line heater	Number of Burners	1
Fuel Type	Associated Gas	Total Heat Input- HI (MMBtu/hr)	1.00
Actual Annual Inputs- PTE		**Allowable Annual Inputs**	
Potential Hours of Operation	8760	Potential Hours of Operation	8760
Potential Fuel Usage (MMscf/yr)	5.74	Potential Fuel Usage (MMscf/yr)	5.74
Potential Fuel Usage (scf/hr)	654.88	Potential Fuel Usage (scf/hr)	654.88

Actual Annual Emissions- PTE

Pollutant	Emission Factor (lb/MMBtu)	Estimated Emission (lb/hr)	Estimated Emission (tpy)	Emission Factor Source
NO_x	0.10	0.10	0.44	AP-42-Table 1.4-1-2
CO	0.08	0.08	0.35	AP-42-Table 1.4-1-2
VOC	0.01	0.01	0.04	AP-42-Table 1.4-1-2
PM_{10}	0.0075	0.01	0.03	AP-42-Table 1.4-1-2
HAP	0.002	0.00	0.01	AP-42-Table 1.4-1-2
CO_2e**	53.075	117.01	512.50	MRR

**= Kg/MMBtu

Allowable Annual Emissions

Pollutant	Emission Factor (lb/MMBtu)	Estimated Emission (lb/hr)	Estimated Emission (tpy)	Emission Factor Source
NO_x	0.10	0.10	0.44	AP-42-Table 1.4-1-2
CO	0.08	0.08	0.35	AP-42-Table 1.4-1-2
VOC	0.01	0.01	0.04	AP-42-Table 1.4-1-2
PM_{10}	0.0075	0.01	0.03	AP-42-Table 1.4-1-2
HAP	0.002	0.00	0.01	AP-42-Table 1.4-1-2
CO_2e**	53.075	117.01	512.50	MRR

**= Kg/MMBtu

enerplus **Generator Engine Detail Sheet**

Horns Well Pad			
Source ID	Generator_Engine	Natural Gas Generator	14 L Natural Gas
Source Description	Generator for Site Power	Fuel Heating Value- HV (Btu/scf)	1,527
Fuel Type	Associated Gas		
Actual Annual Inputs- PTE		**Allowable Annual Inputs**	
Potential Hours of Operation	8,760	Hours of Operation	8,760
Hourse Power (bhp)	362	Hourse Power (bhp)	362
Fuel Use Rate (scf/hr)	2,431	Fuel Use Rate (scf/hr)	2,431
Annual Fuel Consumption (MMscf/yr)	21.30	Annual Fuel Consumption (MMscf/yr)	21.30
BSFC @ 100% Load (Btu/hp-hr)	10,255	BSFC @ 100% Load (Btu/hp-hr)	10,255
Heat Input (MMBtu/hr)	3.71	Heat Input (MMBtu/hr)	3.71

Pollutant	Emission Factor (g/hp-hr)	Estimated Emissions (lb/hr)	Actual Annual Emissions PTE (TPY)	Allowable Annual Emissions (TPY)	Emission Factor Source
NO_x	1.00	0.80	3.50	3.50	Manufacture
CO	2.00	1.60	6.99	6.99	Manufacture
SO_2*	5.88E-04	2.18E-03	0.01	0.01	AP-42, Table 3.2-3
VOC	0.70	5.59E-01	2.45	2.45	Manufacture
PM*	1.94E-02	7.21E-02	0.32	0.32	AP-42, Table 3.2-3
HCHO*	2.05E-02	7.61E-02	0.33	0.33	AP-42, Table 3.2-3
CO_2**	53.02	433.91	1900.52	1900.52	EPA MRR
CH_4**	1.00E-03	8.18E-03	0.04	0.04	EPA MRR
N_2O**	1.00E-04	8.18E-04	0.00	0.00	EPA MRR
Acetaldehyde*	2.79E-03	1.04E-02	0.05	0.05	AP-42, Table 3.3-3
Acrolein*	2.63E-03	9.76E-03	0.04	0.04	AP-42, Table 3.2-3
Benzene*	1.58E-03	5.87E-03	0.03	0.03	AP-42, Table 3.2-3
Ethylbenzene*	2.48E-05	9.21E-05	0.000	0.00	AP-42, Table 3.2-3
Toluene*	5.58E-04	2.07E-03	0.01	0.01	AP-42, Table 3.2-3
PAH*	1.41E-04	5.23E-04	0.002	0.00	AP-42, Table 3.2-3
Xylene*	1.95E-04	7.24E-04	0.003	0.00	AP-42, Table 3.2-3
Methanol*	3.06E-03	1.14E-02	0.05	0.05	AP-42, Table 3.2-3
1,3-Butadiene*	6.63E-04	2.46E-03	0.01	0.01	AP-42, Table 3.2-3
Total HAPs		0.12	0.52	0.52	

*= Lb/MMBtu, **= Kg/MMBtu

Fugitives Detail Sheet

Horns Well Pad			
Source ID	Fugitives	Number of Producing Wells on the Pad	1
Source Description	Equipment Leaks/ Vehicle Traffic		
Actual Annual Inputs- PTE		**Allowable Annual Inputs**	
Potential Hours of Operation	8760	Hours of Operation	8760

Equipment Leaks

Pollutant	Emission Factor (lb/hr)	Actual Annual Emissions- PTE (lb/hr)	(tpy)	Allowable Annual Emissions (lb/hr)	(tpy)	Source of Emission Factor
VOCs	0.141	0.14	0.62	0.14	0.62	EPA
HAPs	0.010	0.01	0.04	0.01	0.04	Mass Balance
H_2S*	0.000	0.00	0.00	1.74	7.62	Mass Balance
CO_2e	1.320	1.32	5.78	1.32	5.78	Mass Balance

* ppm. Actual 0.0 ppm H_2S, Potential 200 ppm H_2S

Vehicle Traffic

Pollutant	Emission Factor	Units	Operation (VMT)	Estimated Emissions (lb/hr)	(tpy)	Source of Emission Factor
PM_{10}	2.7	lb/VMT	80	0.02	0.11	AP-42